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AUTHOR	Cooper, Harris
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ABSTRACT

The current 9-month school calendar emerged when 85 percent of Americans were involved in agriculture. Today, only about 3 percent of Americans' livelihoods are tied to the agricultural cycle, and air-conditioning makes it possible for schools to provide comfortable learning environments year-round. Noting the National Education Commission on Time and Learning report, which reflected a growing concern about the impact of a long summer break on at-risk students, this Digest examines loss of learning over summer and offers suggestions for addressing the problem. The digest first examines concerns raised by long summer vacations: children learn best when instruction is continuous; the long break affects special needs students, such as those learning English as a second language or those with disabilities; and equity concerns, as higher SES students often return from summer break with considerable educational advantage. The Digest next summarizes research into summer learning loss. Meta-analyses are cited, which found that summer learning loss equaled at least one month of instruction as measured by grade level equivalents on standardized test scores, that summer loss was more pronounced for math facts and spelling--both factual/procedural rather than conceptual learning; and that individual differences among students may also play a role. Finally, the Digest details three approaches to preventing summer learning loss: extended school year, summer school, and a modified calendar that replaces the long summer break with shorter cycles of attendance and breaks. (Contains 15 references.) (HTH)

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By

Harris Cooper

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University of Illinois • 51 Gerty Drive • Champaign, IL 61820-7469
(217) 333-1386 • (800) 583-4135 (voice/TTY) • ericeece@uiuc.edu • http://ericeece.org

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Summer Learning Loss: The Problem and Some Solutions

Harris Cooper

In the early years of formal schooling in America, school calendars were designed to fit the needs of each particular community (Gold, 2002). Some communities had long summer breaks that released children from school in spring to help with planting and in fall to help with the harvest, while urban schools sometimes operated on 11- or 12-month schedules. By 1900, migration from the farm to the city and an increase in family mobility created a need to standardize the time children spent in school. The present 9-month calendar emerged when 85% of Americans were involved in agriculture and when climate control in school buildings was limited. Today, about 3% of Americans' livelihoods are tied to the agricultural cycle, and air-conditioning makes it possible for schools to provide comfortable learning environments year-round (Association of California School Administrators, 1988). Nevertheless, the 9-month school year remains the standard.

Concerns Raised by the Long Summer Vacation

In 1993, the National Education Commission on Time and Learning (NECTL, 1993) urged school districts to develop school calendars that acknowledged differences in student learning and major changes taking place in American society. The report reflected a growing concern about school calendar issues, especially for students at risk for academic failure.

Educators and parents often voice three concerns about the possible negative impact of summer vacation on student learning. One concern is that children learn best when instruction is continuous. The long summer vacation breaks the rhythm of instruction, leads to forgetting, and requires a significant amount of review of material when students return to school in the fall. Also, the long summer break can have a greater negative effect on the learning of children with special educational needs. For example, children who speak a language at home other than English may have their English language skills set back by an extended period without practice, although there currently is little evidence related to this issue. Children with some disabilities may also profit from summer programs. While there is little evidence that a student's IQ is related to the impact of summer break (Cooper & Sweller, 1987), Sargent and Fidler (1987) provided some evidence that children with learning disabilities may need extra summer learning opportunities. Many states mandate extended-year programs for students with learning disabilities because they recognize these children's need for continuous instruction (Katsiyannis, 1991). And finally, tying summer vacation to equity issues, Jamar (1994) noted that "Higher SES students may return to school in the fall with a considerable educational advantage over their less advantaged peers as a result of either additional school-related learning, or lower levels of forgetting, over the summer months" (p. 1).

Research on Summer Learning Loss

A research synthesis conducted by Cooper et al. (1996) integrated 39 studies examining the effects of summer vacation on standardized achievement test scores. The 39 studies included 13 that could be included in a meta-analysis (a statistical integration) of the results. The meta-analysis indicated that summer learning loss equaled at least one month of instruction as measured by grade level equivalents on standardized test scores—on average, children's tests scores were at least one month lower when they returned to school in fall than scores were when students left in spring.

The meta-analysis also found differences in the effect of summer vacation on different skill areas. Summer loss was more pronounced for math facts and spelling than for other tested skill areas. The explanation of this result was based on the observation that both math computation and spelling skills involve the acquisition of factual and procedural knowledge, whereas other skill areas, especially math concepts, problem solving, and reading comprehension, are conceptually based. Findings in cognitive psychology suggest that without practice, facts and procedural skills are most susceptible to forgetting (e.g., Cooper & Sweller, 1987). Summer loss was more pronounced for math overall than for reading overall. The authors speculated that children's home environments might provide more opportunities to practice reading skills than to practice mathematics. Parents may be more attuned to the importance of reading, so they pay attention to keeping their children reading over summer.

In addition to the influence of subject area, the meta-analysis indicated that individual differences among students may also play a role. Among those examined in the studies used in the meta-analysis, neither gender, ethnicity, nor IQ appeared to have a consistent influence on summer learning loss. Family economics was also examined as an influence on what happens to children over summer. The meta-analysis revealed that all students, regardless of the resources in their home, lost roughly equal amounts of math skills over summer. However, substantial economic differences were found for reading. On some measures, middle-class children showed gains in reading achievement over summer, but disadvantaged children showed losses. Reading comprehension scores of both income groups declined, but the scores of disadvantaged students declined more. Again, the authors speculated that income differences could be related to differences in opportunities to practice and learn reading skills over summer, with more books and reading opportunities available for middle-class children (see also Alexander, Entwisle, & Olson, in press).

Three Remedies for Summer Learning Loss

Three approaches to preventing summer learning loss are offered most often: extending the school year, providing summer school, and modifying the school calendar.

Extended School Year. Most of the arguments offered in support of an extended school year invoke international comparisons showing that the number of days American students spend in school lags behind most other industrialized nations. For example, the NCETL (1993) reported that most students in the United States spend between 175 and 180 days in school each year, while students in Japan spend 240 days in school.

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Arguments against extending the school year generally question whether more time in school automatically translates into more time on task. For example, the National Education Association (1987) questioned whether additional time in school might simply lead to additional fatigue for students. Many argue that unless additional time is accompanied by changes in teaching strategy and curricula, the added time may be frittered away (Karweit, 1985). Related to this argument is the notion that adding, for example, 5 or 6 days to a school year represents only a 3% increase in school time. Hazleton and colleagues (1992), based on work by Karweit (1984), suggested that 35 extra days would be needed to produce a noticeable change in student achievement. Thus, given other options for spending education dollars, opponents ask whether money might not more effectively be spent on improving the quality of instruction or reducing class size.

Summer School. Summer learning loss also can be used to argue for increasing students' access to summer school. A research synthesis reported by Cooper et al. (2000) used both meta-analytic and narrative procedures to integrate the results of 93 evaluations of summer school. Results revealed that summer programs focusing on remedial, accelerated, or enriched learning had a positive impact on the knowledge and skills of participants. Although all students benefited from summer school, students from middle-class homes showed larger positive effects than students from disadvantaged homes. Remedial programs had larger effects when the program was relatively small and when instruction was individualized. As would be expected from the summer learning loss literature, remedial programs may have more positive effects on math than on reading. Requiring parent involvement also appeared related to more effective programs. Students at all grade levels benefited from remedial summer school, but students in the earliest grades and in secondary school may benefit most.

Modified Calendars. Finally, summer learning loss also could be used to argue for modifying the school calendar to do away with the long summer break. Many proponents of school calendar change call for modified arrangements in which children might or might not attend school for more days, but the long summer vacation is replaced by shorter cycles of attendance breaks.

A meta-analysis by Cooper et al. (in press) focused on studies of school districts that modified their calendars but did not increase the length of their school year. The most important finding of the synthesis was that the quality of evidence available on modified school calendars made it difficult to draw any reliable conclusions. Moreover, the evidence from the meta-analysis revealed ambiguous results. First, 62% of 58 districts reported that students in the modified calendar program outperformed students in the traditional calendar program. Second, the effect for 39 school districts favored modified calendars, but the size of the impact, though significant, was quite small. There was stronger evidence that (1) modified calendar programs do improve achievement for economically disadvantaged or poor-achieving students; (2) programs implemented more recently may be showing improved results; and (3) the students, parents, and staffs who participate in modified calendar programs are overwhelmingly positive about the experience. There are also specific actions that policy makers can take to improve community acceptance of modified calendars, such as involving the community in planning the program and providing high-quality intersession activities.

Conclusion

In sum, what do we know? (1) It is clear that students do forget mathematics material over the summer, and poor children lose reading skills as well. (2) Extending the school year by a few days is a questionable intervention, but we should not rule out the possibility that substantial increases in the length of the school year coupled with corresponding curricula reform could have a positive impact on student learning. (3) Summer programs are an effective intervention for purposes of academic remediation, enrichment, or acceleration, and a knowledge base has accumulated that can help make the most of summer school. (4) Modified school calendars may have a small positive impact on student achievement and a more noticeable impact on the achievement of disadvantaged children, but the existing research contains design flaws that render conclusions tentative at best. Further, there are many variables that might influence the effect of calendar variations that are yet to be tested.

For More Information

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